

Special Article



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WTO Accession for China & Taiwan: Potential Trade Impacts

Integration of China and Taiwan into the World Trade Organization's (WTO's) global trading system would expand world trade significantly. Both China and Taiwan as well as the U.S. would benefit, mainly because of the three countries' complementary resource endowments. The U.S., for example, is rich in capital and arable land, while China has an abundance of unskilled labor.

With China and Taiwan in the WTO, world exports of all products would expand by an estimated \$78 billion annually (1992 prices), and global consumption by \$45 billion, according to analysis by USDA's Economic Research Service (ERS). Global competition in the production of labor-intensive products would heighten, driving down prices. The demand for capital- and skill-intensive manufactured goods would increase, benefiting industrialized countries such as the U.S.

China's net agricultural imports would increase by over \$8 billion annually as rising incomes stimulate demand for more varied and higher quality foods, as labor and other resources shift out of farming to labor-intensive manufacturing, and as textile production expands. Total U.S. food and agricultural exports would increase by over \$2 billion annually, with nongrain crops (notably cotton) and processed foods gaining the most.

China was a founding member in 1948 of the WTO's predecessor, the General Agreement on Tariffs and Trade (GATT).

However, the country withdrew in 1950 after its communist revolution established the People's Republic. In 1986 China applied to re-enter the GATT. Taiwan, separated from the rest of China during the revolution, applied for admission in 1990. Taiwan's admission to the World Trade Organization (WTO) is very likely to coincide with China's.

The difficulties of bringing China's formerly command-driven economy into line with the market-oriented principles of the GATT and WTO have so far stymied agreement on terms for re-entry. The issues concerning Taiwan—which is rapidly becoming a mature market economy—are more tractable, although a number of contentious matters remain outstanding. Nevertheless, it remains highly unlikely that Taiwan's admission will be put to a vote until China's entry problems are solved. The British Crown Colony of Hong Kong has had a major role in world trade as a transit port, especially for goods going to and from China. Hong Kong reverted to Chinese control on July 1, 1997 as a special autonomous region and will retain its separate WTO status.

Since China and Taiwan will likely be admitted to the WTO at about the same time, the effects of enlarging the WTO are analyzed here in terms of their *combined* admission. In addition, the ERS study assumed that Hong Kong remains a free port and independent tariff territory (as required by the Basic Law governing the reunification of Hong Kong with China), with tariffs applied only when goods cross the border from Hong Kong to the rest of China.

Resource Endowments Influence Trade Patterns

Differences in factor endowments—i.e., resources available for use as inputs in a country's various production processes—are important for understanding the direction of net trade flows. Removing trade barriers allows a country to export more of those goods which it produces relatively efficiently, with the proceeds applied to import more of the goods it produces less efficiently. This expansion of trade in both directions increases real incomes for all trading countries.

This study divided factors of production into four groups—*unskilled labor*, *skilled labor*, *land*, and *capital*. The different countries and regions of the world were classified into three groups—scarce, intermediate, and abundant.

In China, South Asia, and Southeast Asia, capital is scarce and expensive relative to labor. The reverse is true for the countries in the five *high-income* industrial regions—the U.S., Canada, the European Union (EU), Japan, and Australia/New Zealand. The newly industrialized economies of Korea, Hong Kong, and Taiwan fall somewhere in between—their labor costs are only a third or a fourth of those in *high-income* countries, but much higher than labor costs in *low-income* developing regions.

Japan, Korea, Taiwan, and China are poorly endowed with arable land relative to labor. Conditions are just the opposite in the U.S., Canada, and Australia/New Zealand where land is abundant and cheap. The EU, South Asia, and Southeast Asia have intermediate amounts of arable land per capita.

The Model & Assumptions Behind the Results

To calculate the effects of China's and Taiwan's joining the WTO, ERS used a computable general equilibrium (CGE) model of world production and trade. The model divides the world into 12 regions, and classes all goods and services into 14 sectors, produced by 4 categories of production factors—unskilled labor, skilled labor, land, and capital.

The major data source for the model was the Global Trade Analysis Project (GTAP) database, Version 3 Prerelease. The model was implemented using the General Algebraic Modeling System (GAMS) software. A detailed description of the structure of the model and of the estimated changes induced by WTO enlargement are in USDA Technical Bulletin No. 1858.

Starting from the actual situation in 1992 (the latest year for which a reasonably complete data set is available), global income and trade calculations were made under the assumption that the Uruguay Round accord had already been completely implemented, but *without* China and Taiwan's participation. A second set of calculations was made assuming that the Uruguay Round accord had been fully implemented *with*

China and Taiwan as full members. The *difference* between these two hypothetical scenarios—Uruguay Round implementation *with* and *without* Chinese and Taiwanese participation—yields the estimated impact of China's and Taiwan's accession.

The analysis has some limitations. First, neither China nor Taiwan has finalized the terms of entry to the WTO. The size of their trade concessions, the timing of the start of trade liberalization, and the length of the phase-in period are all unknown. This analysis guessed at the likely size of trade concessions, and finessed the issue of timing by assuming the phase-in period had been completed by 1992.

Second, there are uncertainties about the size of parameters, such as elasticities of substitution between commodities or the effective rates of border protection, especially for China's pervasive nontariff barriers like quotas and state trading. Finally, the model is a highly stylized simplification of the world economy that is far from perfect. Therefore, the results should be interpreted with caution and viewed as rough estimates, not as precise measurements.

The level of land intensity greatly influences the direction of net trade flows in food and agricultural products. The U.S., Canada, and Australia/New Zealand—the land-abundant regions—are net exporters of all food and agricultural product categories. Japan, Korea, Hong Kong, and Taiwan—the land-scarce regions—are net importers of all such products. The EU, South Asia, and Southeast Asia, with intermediate land endowments, are each net exporters and net importers of different agricultural product categories. The EU is a net exporter of wheat, feed grains, and processed food, but a net importer of rice, nongrain crops, and livestock. South and Southeast Asia are net exporters of rice and nongrain crops, but net importers of wheat, other grains, meat and dairy products, and livestock.

China is the only exception to this pattern. A land-scarce country, it imports wheat while being a net exporter of rice, feed grains, and nongrain crops, and it is largely self-sufficient in livestock products. China's aggregate surplus in agricultural trade is a consequence of its government's food self-sufficiency policies rather than the result of taking best advantage of its factor endowments.

The general correspondence between capital intensities and the direction of net trade flows for different kinds of manufactured goods is also apparent. High-income industrial countries are net importers of labor-intensive manufactured goods (textiles and apparel, and other light manufactured goods), and net exporters of capital- and skill-intensive manufactured goods (machinery and equipment, and manufactured intermediates such as fertilizer and steel).

The trade patterns of labor-abundant regions such as China, Southeast Asia, and South Asia are mirror images: they are net

exporters of labor-intensive manufactured goods and net importers of capital-intensive manufactured goods. At an intermediate level of capital intensity, Korea, Hong Kong, and Taiwan are net buyers and sellers of different skill- and capital-intensive manufactured goods, while remaining net exporters of labor-intensive manufactured goods.

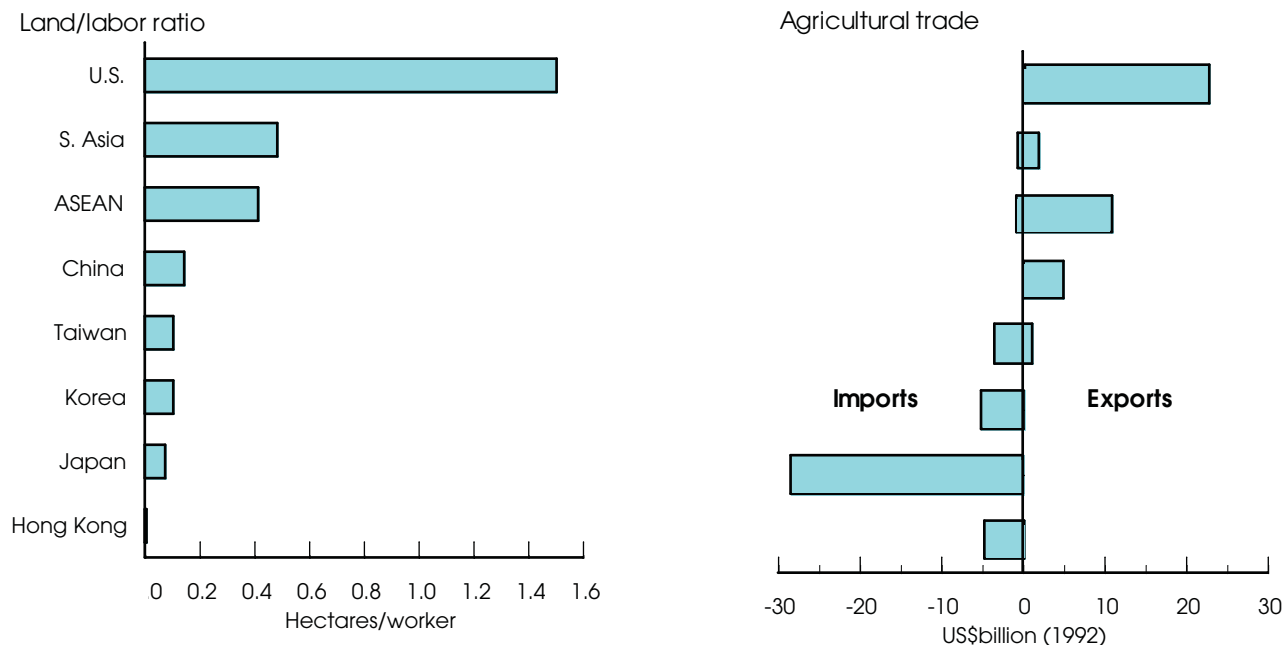
Because of China's comparative advantage in labor-intensive products, it has gained more than a 10-percent share of world exports of labor-intensive goods, even without the privileges of WTO membership. After induction into the WTO, China could further expand production of labor-intensive manufactured products, notably textiles and apparel. To supply its mills, China would have to import more cotton and wool. The expansion of labor-intensive manufacturing also would cause resources to be bid away from farming. This would reduce China's agricultural exports and increase its food and agricultural imports. U.S. farmers—especially feed grain, wheat, and cotton growers—would benefit.

The South and Southeast Asian regions, which compete with China in exporting labor-intensive manufactured products, would face increased competition and lowered prices for their industrial exports. As a result, they would likely experience declines in market share and export revenue from labor-intensive manufacturing. Both China and Taiwan, with scarce arable land, would increase their imports of grain over time. Taiwan's farmers would adjust by cutting production of land-intensive crops like grains, while expanding their output of high-value products like meats, fruits, and vegetables.

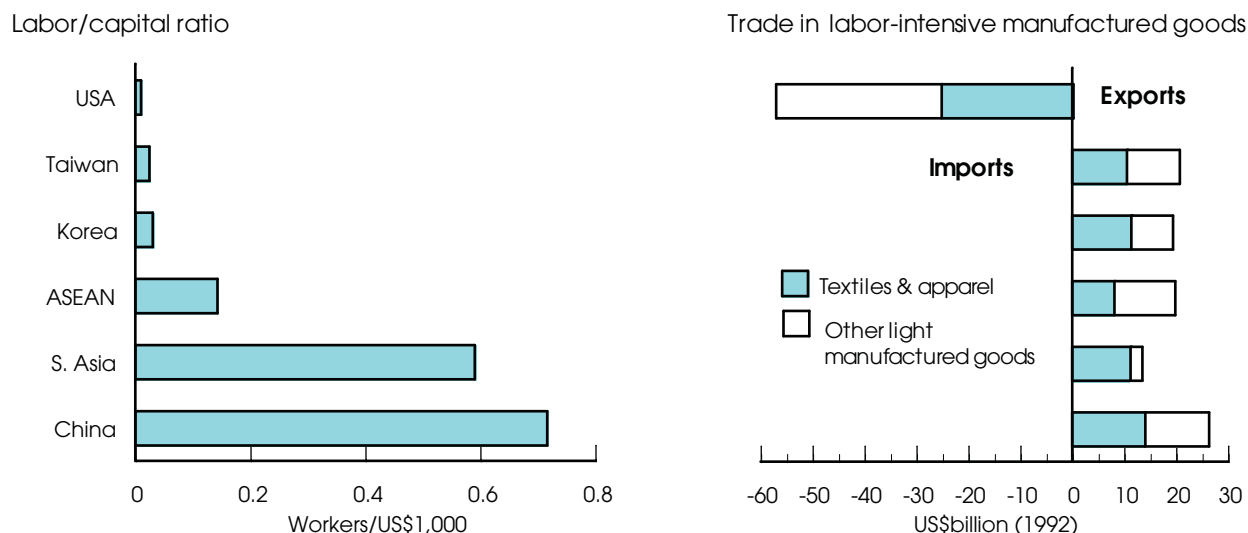
The U.S. and China are generally not competing economically for international trade, at their current relative stages of

Special Article

Countries with Abundant Arable Land Tend to Export Agricultural Products



Abundant Labor Is Associated with Exports of Light Manufactured Goods



Economic Research Service, USDA

development. Instead, their different factor endowments make their trade complementary. South and Southeast Asian countries compete with each other, and with China, to sell labor-intensive goods in industrialized countries, and to attract foreign direct investment from these countries. Similarly, Japan, the EU, and the U.S. compete to meet demand for technology- and capital-intensive goods in China and other Asian developing countries, and to tap investment opportunities there.

U.S. & Global GDP to Rise

If the Uruguay Round agreement had been in full effect in 1992 (the latest year for which a reasonably complete data set is available) *without* the participation of China and Taiwan, U.S. consumers would have been able to purchase an estimated additional \$20 billion of goods and services (over 0.3 percent of 1992 U.S. GDP). Full implementation of the Uruguay Round *with* Chinese and Taiwanese participation would have raised U.S.

GDP by nearly \$28 billion (almost 0.5 percent of 1992 GDP). Thus, the study suggests that the admission of China and Taiwan to the WTO would increase U.S. real GDP by more than \$7 billion (slightly more than 0.1 percent)—i.e., the *difference* between the “with” and “without” scenarios.

At the global level, the estimated increase in real consumption from Uruguay Round implementation in 1992 would have been about \$167 billion with present WTO membership, plus an *additional* \$46 billion (or 0.2 percent of 1992 world GDP) with Chinese and Taiwanese participation.

By far the largest benefits of WTO enlargement, when measured as a portion of national income, would accrue to the new members. The gains result from China and Taiwan undertaking reforms when joining the WTO, thereby improving resource allocations and increasing economic efficiency. Annual GDP would rise by nearly 5 percent (or about \$23 billion) in China and Hong Kong combined. Annual GDP would be more than 2 percent (over \$4 billion) greater in Taiwan. Real GDP in all other regions would rise by about 0.2 percent or less. The admission of China and Taiwan to the WTO would slightly reduce trade liberalization gains for South and Southeast Asia, as competition would intensify in world markets for labor-intensive manufactured exports like textiles and apparel, shoes, and toys.

U.S. & World Ag Trade Would Expand

Admission of China and Taiwan to the WTO would increase agricultural exports (including processed food) from almost all regions of the world, with the important exception of almost a \$3-billion reduction in Chinese exports. Along with an increase of nearly \$6 billion in China's imports, this would result in an increase of over \$8 billion in China's *net* agricultural imports.

China would increase its net imports of grain by nearly \$600 million, and Taiwan by almost \$100 million. Canada would supply most of the additional wheat, while the U.S. would furnish most of the additional feed grains. Reduced rice exports from China to global markets would be replaced by increased exports from other regions, principally South and Southeast Asia. Taiwan's *net* food imports would rise by more than \$0.6 billion, as increases in agricultural imports would more than offset an increase of over \$1 billion in agricultural exports. More than half of Taiwan's export expansion would consist of processed food, following a restructuring of its agricultural sector away from production of land-intensive crops like feed grains (down by 60 percent), and toward high-value crops and processed food.

Agricultural imports would increase most in China and Taiwan, as described above, followed distantly by Japan (\$0.5 billion). Hong Kong and Korea would see insignificant increases. Agricultural imports would decline by \$0.5 billion or less in the South and Southeast Asia regions, as well as the Rest of the World region (consisting mainly of Latin America, Eastern Europe, and Africa). Reduced production of labor-intensive manufactured goods in these regions, following increased Chinese competition in world markets, would leave them with more resources in agriculture and less need for food, fodder, and fiber imports.

The Steps in WTO Accession

The Uruguay Round of the General Agreement on Tariffs and Trade (GATT) established the World Trade Organization (WTO) on January 1, 1995. The WTO is the legal and institutional foundation for the multilateral trading system and provides the forum for trade negotiations through collective debate, negotiation, and adjudication. The Uruguay Round also brought agriculture into the general discipline of the GATT through substantive reductions in export subsidies, internal support, and import barriers.

A country requesting membership must submit a memorandum to the WTO which details its trade policies as they relate to WTO laws. Interested WTO members form a working party to evaluate the policies of the applicant country. The working party requests additional information on existing policies and assesses commitments by the acceding country to liberalize its trade position. After interested WTO members are satisfied that the applicant government's trade policies conform with the laws of the WTO, the accession is put to the full membership for approval. As of March 27, 1997, 131 countries had become WTO members. An additional, 28 countries have requested permission to join the WTO.

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The admission of China and Taiwan to the WTO would augment total annual U.S. food and agricultural exports by over \$2 billion (more than 3 percent), while raising U.S. agricultural imports by only \$100 million. Almost all of the net increase in U.S. exports would go to China and Taiwan, each importing about an additional \$1 billion from the U.S. Additional exports would go to Japan, Korea, and Hong Kong, replacing products that they previously imported from China.

The composition of increased U.S. agricultural exports going to China and to Taiwan would be quite different. In Taiwan, non-grain crops would account for 60 percent of the increase, and processed food for an additional 30 percent. The increase in U.S. exports to China would consist mainly of processed food products (79 percent). Livestock products, nongrain crops (such as cotton), and grains would make up the remaining 21 percent. These estimates, however, are sensitive to the details of trade concessions, which have yet to be negotiated.

Overall, U.S. agricultural exports would see the greatest expansion in the processed food sector, followed by feed grains and nongrain crops, and livestock products. As a result of the increase in global demand, export prices (f.o.b.) for U.S. food and agricultural products would increase in every sector, raising farm incomes.

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